

BEFORE THE  
UNITED STATES HOUSE OF REPRESENTATIVES  
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE  
SUBCOMMITTEE ON RAILROADS

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HEARING ON  
RAILROAD INDUSTRY HUMAN FACTOR SAFETY ISSUES

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TESTIMONY OF  
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Thank you Mr. Chairman, Madame Ranking Member, and Members of the Subcommittee. My name is John Tolman, and I am the Vice President and National Legislative Representative of the Brotherhood of Locomotive Engineers and Trainmen, which is a division of the Teamsters Rail Conference. On behalf of more than 33,000 BLET members and 70,000 Rail Conference members, I want to thank the Subcommittee for holding this hearing on human factor safety issues in the railroad industry and for the opportunity to testify.

I would like to focus today on three subjects. First, I want to underscore prior BLET testimony concerning fatigue, and how the industry's rampant manipulation of the Hours of Service Act and governing FRA regulations contribute to this growing problem. Second, I am going to address the nexus between inadequate training and human factor accidents. And, third, I want to inform the Subcommittee of a couple of potential hazards inherent in some of the technologies that promise to eliminate human factor accidents.

A little less than three weeks ago, the National Transportation Safety Board adopted a report determining that the 2004 Macdona, Texas, collision and toxic chlorine release, which killed three people, was caused by a fatigued crew's failure to respond to wayside signals. The crew was criticized for failing to effectively use off-duty time, thereby not obtaining sufficient restorative rest prior to reporting for duty, and Union Pacific was criticized for train crew scheduling practices that created inverted crew members' work/rest patterns.

The NTSB's determination illustrates a problem that has increased in severity in recent years. For many decades, then-prevailing industry practices worked to minimize or camouflage potential fatigue problems. Much larger crew sizes greatly reduced the likelihood that an entire crew would be working while fatigued. Moreover, collective bargaining agreements contained maximum mileage regulations — that were strictly enforced — under which a worker would be marked off for the remainder of the month when the maximum was exceeded.

Over the past 50 years, technology has reduced crew size from five or six to two or three. Notwithstanding this fact, the supply of locomotive engineers, conductors and brakeman has not kept up with demand, creating enormous pressure on the industry to work crews above agreement-based mileage levels. The desire of railroad workers to improve, and not just maintain, their standards of living created similar pressure on unions to permit crews to continue working when those mileage levels were exceeded. As a result of these factors, today's smaller crews work far more trips and miles than their historical predecessors.

Compounding these changes is something called "limbo time," the rampant abuse of which by the nation's railroads is producing intolerable working conditions for train crews. As you know, the Hours of Service Act was enacted in 1907 and has been amended several times since. It currently is codified at Chapter 211 of Subtitle V to Title 49 of the United States Code.

Section 21103 prohibits operating employees from working more than twelve consecutive hours in any 24-hour period, with limited exceptions. If a train cannot reach its destination within the twelve hours, the crew must stop in time to cease all work prior to the expiration of the twelfth hour, at which point they are considered "outlawed." A railroad that requires an operating

employee to perform service covered by the Act beyond the twelfth hour, unless the circumstances are excepted by statute, is subject to a civil penalty.

Under current law, “[t]ime spent in deadhead transportation to a duty assignment is time on duty, but time spent in deadhead transportation from a duty assignment to the place of final release is neither time on duty nor time off duty.” 49 U.S.C. § 21103(b)(4). Thus, a crew who stops their train short of the destination terminal because they have “outlawed” are in “limbo” status with respect to the Hours of Service Act while deadheading from where they stop to their off-duty point.

The history of the Act shows a pattern of abuse by carriers that continues to this very day. For example, the Supreme Court rejected an argument by a railroad that it should not be fined for violating the Act because a delay to the train caused the crew to “outlaw.” Missouri K & T Ry. Co. of Tex v. U.S., 231 U.S. 112 (1913). That court also rejected the argument that time spent by the crew waiting for their locomotive to be watered and repaired should not be included in calculating the hours of service, because the crew was “under orders, liable to be called upon at any moment, and not at liberty to go away. Their duty was to stand and wait.” Id.

The evolution of the current problem caused by railroad abuse of “limbo time” is set forth in detail in Brotherhood of Locomotive Engineers, et al., v. Atchison, Topeka & Santa Fe Railroad Co., et al., 516 U.S. 152 (1996). Prior to amendments made in 1969, all deadhead time — whether to or from a duty assignment — was considered off-duty time. 516 U.S. 152, 159, citing United States v. Great Northern R. Co., 285 F. 152, 153 (CA9 1922). In 1969, Rail Labor sought to correct this problem by proposing that all deadhead time be considered on duty time; the industry balked over liability for civil penalties in the event of a “miscalculation” in relieving crews, and Congress created “limbo time” as a compromise solution. Id. at p. 160.

On its face, Section 21103(b)(4) is clear with respect to time spent in the vehicle providing deadhead transportation: it is neither on-duty time nor off-duty time. The issue that confronted the Supreme Court was “how to classify the time the outlawed crew spends waiting for the deadhead transportation to arrive” at the location where they outlawed. Id. at p. 155. The Ninth Circuit had held that such waiting time was time on duty, while the Seventh Circuit, *en banc*, held that it was limbo time. Id. In resolving this disagreement between the circuits, a unanimous Supreme Court held “that Congress intended that time spent waiting for deadhead transportation from a duty site should be limbo time.” Id. at p. 162.

The decade since the Court’s decision has seen both the number of crews stranded waiting for transportation and the length of limbo time increase. Indeed, the problem has become so prevalent in recent years that the December 16, 2003 BLE National Agreement included language committing that participating carriers would “make reasonable efforts to relieve and expeditiously transport [outlawed crews] to the tie-up point.” Unfortunately, however, things have only deteriorated since that commitment was made.

Over the past nine months, we have received many thousands of reports of excessively long tours of duty. Our staff presently is assembling these data into a usable form; a project we expect will be completed later this year. However, I can tell you that the preliminary information we have is shocking.

According to data prepared by one of the four largest Class I railroads — covering the first six months of this year — on average, work tours for over 224 crews exceeded 14 hours every day! An average of nearly 103 crews a day work tours in excess of 15 hours, and over 46½ work tours in excess of 16 hours. Almost 20 crews every week for the first six months of this year had a work tour more than 20 hours long; that's 12 hours of work followed by more than 8 hours of deadhead/limbo time.

In 2002, an average of just under 90 crews per day on this railroad had duty tours in excess of fourteen hours, and over 33½ had tours over fifteen hours. Last year, the average number of crews exceeding fourteen hours had more than doubled — to over 218 per day — and the average number of crews exceeding fifteen hours had more than tripled, to nearly 105 per day. As I testify today, we are now in our nineteenth month of such excessive limbo time.

Data provided to us by a local BLET official concerning one terminal on another Class I railroad is similarly troubling. In this one terminal alone, an average of 15 crews had work tours in excess of 13 hours every two days between February 1<sup>st</sup> and June 30<sup>th</sup> of this year. One third of those crews had work tours in excess of 14 hours.

The industry makes two responses to its self-created limbo time crisis. One is that crews are not disadvantaged because they are paid for their excessively long work tours. Very frequently that is not the case. Under existing national agreements, road freight crews are not entitled to overtime until they have “run off” the mileage for their trip. For example, crews on pools in excess of 200 miles one way would not accrue overtime until well after twelve hours have been spent on duty. Some system and local agreements provide for overtime at a point prior to when the miles have been “run off,” but many do not. The undisputable fact is that crews do not receive any compensation for this time in a large percentage of cases.

The other industry response is that safety is not diminished because the crews are not performing service. This claim is misleading, at best. Many times, a crew will be instructed to not secure their train when the railroad plans to not remove that crew until its relief has arrived. This is done so that the train can be further advanced toward its destination during the period when the crew would otherwise be securing the train.

Furthermore, whether the train has been secured or not, the crew continues to be governed by operating rules requiring that they remain alert and observant, and that they take any action necessary to protect the train against unanticipated mechanical problems or vandalism. In a November 21, 2001 Opinion Letter, FRA's Assistant Chief Counsel for Safety stated that requiring a crew to attend to its train in this manner will be considered limbo time provided that the crew is permitted to leave the train when its relief arrives. Significantly, it was after the

issuance of this Opinion Letter that the number of instances of excessive limbo time began to skyrocket.

You will hear testimony today from someone far more qualified than me about how changing work/rest cycles exacerbate fatigue and make it more difficult to achieve and maintain full alertness. However, two observations are worth making at this point. The first is that the maximum work cycle under the Hours of Service Act — 12 hours of work followed by 10 hours off duty — is not, in and of itself, very disruptive of the human circadian cycle, unless it continues unabated for a period of time. The other is that when one adds to the mix limbo time of two, four, six, eight, or more hours on a consistent basis, work/rest cycle begins to sound like an oxymoron.

As a matter of fact, the preliminary NTSB report concerning Macdona indicates that one of the new recommendations the Board intends to issue will be addressed to FRA, urging the agency to “[e]stablish requirements that limit train crewmember limbo time to address fatigue.” Given the 1996 Supreme Court ruling, and in light of the 2001 interpretation of the Chief Counsel’s office, we are not certain at this time whether FRA can address this recommendation via regulation alone; indeed, it may develop that the only solution to the limbo time crisis is legislative. In either case, the elimination of abusive limbo time is one fatigue-fighting option that is available for implementation today.

In our opinion, the industry has been and remains in a state of denial concerning fatigue. The North American Rail Alertness Partnership — or NARAP — was chartered in 1998, and is comprised of management, labor and government officials. Although NARAP has met quarterly for the past eight years, it has failed to meet its promise to date. In fact, labor withdrew from a project to create a NARAP website earlier this year because the industry insists on limiting its scope to educating workers on how to maximize rest during off-duty periods, which reflects the industry’s continuing position that it bears no responsibility to manage in ways that mitigate fatigue.

A similar outcome was the fate of the work of the Collision Analysis Working Group, or “CAWG.” CAWG was created in 2002 at the suggestion of then-Federal Railroad Administrator Allan Rutter, and also was comprised of management, labor and government officials. The group performed a root cause analysis of 65 human factor accidents that occurred on main track, all of which were investigated by FRA Headquarters. These accidents resulted in 16 fatalities, 531 injuries and over \$83 million in track, signal, lading, and equipment damage.

CAWG concluded that fatigue was a possible contributing factor in 19 — or nearly 30% — of the 65 accidents studied. Its Final Report proposed three specific fatigue-mitigation areas in which workers should receive training. However, the Report also concluded that management plays a “major role” in fatigue management, in particular minimizing or eliminating unexpected and unplanned calls for duty. The release of CAWG’s Final Report has been delayed for nearly a year because the industry withdrew from the project after drafting was completed, largely because of CAWG’s conclusions concerning fatigue.

You will no doubt hear the industry repeat past promises to make significant headway in the battle against fatigue, and you may even hear that the Hours of Service Act is an impediment to a solution. However, the real problem is the industry's continuing denial of any responsibility towards its workers in mitigating or preventing fatigue. In fact, the Act was amended almost twelve years ago to include a process whereby labor and management could jointly petition FRA for a waiver of the Act's requirements, for up to two years, for purposes of implementing a pilot program to achieve the Act's goals by alternative measures. No railroad has made any proposal to us that would justify such a petition for waiver during this period.

It bears repeating: of all the various factors that can cause and contribute to fatigue among operating crews, the one that can be resolved today — and simply by better management — is excessive limbo time. To the extent that some crews in some areas are receiving additional pay for this time, curbing limbo time abuse also contributes to the industry's bottom line. We believe the industry's position concerning this subject is indefensible, and we hope the Subcommittee will hold the carriers' feet to the fire on this issue.

The second subject I want to address today concerns the nexus between training and the incidence of human factor accidents. As we stated last month, in testimony before this Subcommittee concerning hazmat issues, the industry is in the midst of a generational turnover triggered by the first retirements of Baby Boomer railroad workers. For this reason, the industry faces a pair of training-related problems.

One concerns the quality and quantity of training for new hires into a particular craft and for promotion, as in the case of Locomotive Engineers. If proper forecasting has not been done, the railroad will find itself pressured to rush training in order to deploy the new workers. It is our understanding, for example, that in some places there is such a shortage of trained Remote Control Locomotive Operators that some railroads are combining RCO training and Conductor training into a single program in order to meet their needs.

This has created such a significant safety concern that the FRA has created a RCO Training Working Group — composed of appropriate industry stakeholders, including the BLET — to review the RCO training model from the ground up, focusing as much on quality as on quantity. That Working Group will meet for the first time this afternoon and we look forward to participating in developing a national training standard.

The other training-related problem flows from pairing relatively inexperienced workers when calling a crew. Classroom training and on-the-job field training provide a necessary foundation for working safely; however, they are merely a foundation. Working safely and efficiently also is a product of experience. Standardized training programs only scratch the surface of the theory of train operation, and offer but a glimpse of the many real-world problems that may arise — often without any forewarning — during a trip or a tour of duty.

The CAWG Final Report I cited earlier noted that the difference in experience between crew members in 42.5% of trains involved in a rule violation was less than three years. Further, no

Conductors with from 7 to 22 years of experience were a member of a crew of a violating train. When the combined Engineer/Conductor experience is less than five years, CAWG found that the accident rate was significantly higher, as compared to the study's control group.

We believe that CAWG has identified a factor that is properly considered a training issue, because railroad workers learn with each new experience in the field. When one member of a crew has significantly more experience than the other, that crew member can both take action to avoid a problem and instruct the junior crew member on how to identify that particular problem and what range of preventive actions are available. The absence of sufficient experience on the part of the entire crew means the lesson will be learned the "hard" way, perhaps with catastrophic consequences. Accordingly, we concur with CAWG's recommendation that experienced workers be paired with junior workers, because it enhances safety.

Finally, I want to give some perspective to technologies that are promoted on the basis that they will vastly reduce, if not eliminate, human factor accidents. Each of these technologies brings with it significant change to the operating environment. For example, several recently-released reports concerning remote control have discussed how the loss of what human factors researchers term "kinesthetic sensation" — and what we Locomotive Engineers call the "seat of your pants" feeling — can cause loss of situational awareness. In other words, if you cannot see or feel what is happening with the train, you may end up confused about the direction of movement, which could lead to an accident.

Likewise, FRA has noted that the computer-controlled power and braking algorithms on a remote control locomotive are not sufficiently sophisticated for main track usage, except in extremely limited circumstances. When an on-board computer senses increased resistance to attempts to increase speed, it will increase the throttle, regardless of the reason. An experienced Locomotive Engineer whose seat tells him of a sudden increase in resistance could be a derailed car out of his line of sight will immediately stop and investigate. The unthinking computer will simply continue to increase power, which could produce a derailment of significantly greater severity.

For all the benefits positive train control will bring, there also are potential hazards that are inherent in the technology. The Locomotive Engineer will have many new tasks to perform, and a number of current tasks will have to be performed differently. Moreover, the Engineer's current strict attention to conditions ahead will be divided between watching the road and monitoring the PTC screen or screens. Indeed, it is our opinion that the Conductor's role with a PTC system will be no less important than it is today.

Further, every study of semi-autonomous control systems, such as PTC, cautions against a system design that fosters reliance on the part of the crew. Reliance on the system creates two problems. First, over-reliance leads to dependency by the Locomotive Engineer, and could lead to a tragic outcome when the Engineer relies on the system over what his or her own eyes, ears and seat are indicating. Second, reliance on the system leads to atrophy of the Engineer's decision-making and operational skills over time, which could lead to accidents if the system

fails and the Engineer must rely upon skills that are stale. For these reasons, PTC is safe only as an overlay and an assisting technology, rather than an automated operational system.

If PTC is designed, tested and implemented in ways that avoid these potential hazards, the industry will take a giant step toward significantly reducing the number of human factor caused accidents. Ignoring these hazards will only replace one set of accident causation factors with another. We will continue to monitor these developments closely and will keep you informed of how we view the evolution of PTC.

While it is true that one human factor caused accident is too many, it also is true that humans make mistakes. A well rested, properly trained and experienced crew, provided with technological assistance that supports — rather than replaces — their skill set is far less likely to be involved in a human factor caused accident than a fatigued, poorly trained, inexperienced crew. We fully support bringing the railroad into the 21<sup>st</sup> Century by improving performance in all three of these areas, leaving none behind.

Once again, I thank the Subcommittee for inviting and hearing me today, and would be pleased to address any questions you may have.